

# Method and Apparatus for an Adaptive Binaural Beamforming System

## ABSTRACT OF THE DISCLOSURE

An adaptive binaural beamforming system is provided which can be used, for example, in a hearing aid. The system uses more than two input signals, and preferably four input signals. The signals can be provided, for example, by two microphone pairs, one pair of microphones located in a user's left ear and the second pair of microphones located in the user's right ear. The system is preferably arranged such that each pair of microphones utilizes an end-fire configuration with the two pairs of microphones being combined in a broadside configuration. Signal processing is divided into two stages. In the first stage, the outputs from the two microphone pairs are processed utilizing an end-fire array processing scheme, this stage providing the benefits of spatial processing. In the second stage, the outputs from the two end-fire arrays are processed utilizing a broadside configuration, this stage providing further spatial processing benefits along with the benefits of binaural processing.